THE CONDITION OF WASTE MANAGEMENT IN ROMANIA

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Abstract:
The present article approaches a very important and actual theme and that is the problem of generating waste in Romania which, on one hand, affects the environment and human health, and on the other hand it reflects the inefficient way of using the natural resources in society. Probably the majority of us have thought or hoped that the natural resources are inexhaustible, but we can see today that the unwise exploitation of these resources is threatening our future.
Waste management is a difficult and complex problem in Romania which is far from being solved according to the environment rules of the European Union. The worsening of the waste problem, especially of the domestic waste is generated by the significant increase of its quantity, as well as by the inappropriate way of solving different stages of waste processing.

Key words: environmental protection; waste; waste management; reuse, reduce and recycle waste

Introduction

The environmental problems are part of the very serious problems mankind is facing and soon no activity field from any country will be able to avoid solving them. Mankind is called to contribute at reducing the impact caused on nature by its activities, by promoting sustainable development, which takes into account : economic development, social welfare and environmental protection. The environment represents all the elements that surround us on which man leaves his blueprint most often in a destructive way, hence the necessity for the intervention of the state bodies in order to protect and conserve the nature. We can easily notice that even where only one man lives, he causes changes to the environment and implicitly creates waste, especially domestic waste. The bigger a community, the bigger its quantity, so that the existence of uncontrolled accumulated waste would create major problems that must be urgently and permanently solved. Consequently, they should be managed in such a way as not to become a burden for the community by imposing selective collection, reusing, recycling and treating it, and finally ecological storage of remaining waste.

Waste management in Romania

On the list of Romania's ecological priorities, waste management is placed on the third place, after water and air pollution.

Adequate waste management supposes the following hierarchy of priorities, according to the strategy of the European Union

Preventing waste generation– by applying "clean technologies" in the activities which generate waste (especially in the industrial sector), but

also in the campaigns for raising awareness in educational institutions and private households;

Reducing the quantity of waste– by applying the best technologies in each activity field that generates waste;

Valorizing the waste– by reusing, material recovery (recycling), energetically recovery (incineration) and biological recovery (composting);

Final waste elimination– by ecological storage, in safe conditions

Preventing waste generation, as a strategic element in the European policy for waste management has become a priority. Acting in this direction, the following results are obtained:

- reducing the costs for raw materials
- reducing the costs for waste elimination
- conserving the natural resources
- improving the company image

Generating, valorizing and storing waste must be a subject of interest for any person, for companies and public authorities.

The first information about generating and managing waste in Romania dates from 1991. Starting with 1995, The Ministry of Environment and Water Management has owned a data base about waste management. Yearly, through the Agencies for Environment Protection there are reporting activities, the data being centralized and processed by The National Institute of Research and Development for Environment Protection. Bucharest. As during that time there was not a systematic weighing of all the collected waste flows, the waste quantities from the data base comprise also estimated data. Since 2005, the data collection for the data base has been done by using questionnaires that are addressed to the waste generators from industry, mining and agriculture, the sanitation operators (waste from cities that are collected and managed), economic agents who recycle waste and the operators for warehouses and incinerators.

The quality of the data about waste management is greatly influenced by a series of conditions existing at the level of the reporting units:

- the availability of technical conditions for recording the waste (mainly the lack of weighing machines at the waste warehouses);
- organizing waste management;
- registering the enterprises in the Statistical Register of Economic Operators;
- the competence and the engagement of responsibilities for completing the statistical questionnaires.

Generating significant waste quantities without considering the possibility of recycling them or recovering the energy, does not comply with the principles of sustainable development. At the moment, in Romania, there are limited possibilities for sorting and collecting different useful fractions from the waste, to which we can add as an important factor, the limited number of economic agents who are willing to recycle these sorted materials. In order to reduce the negative impact on the environment for sustainable development, Romania intends to reduce the volume of waste which is not stored appropriately from the estimated quantity of 3.75 million tones/year to 2.2 million tones/year until 2013.

At present, The Ministry of Environment coordinates the preparation of 30 projects for integrated waste management, which will absorb entirely the sum allocated to Prioritary Axis 2 „The development of integrated waste management systems and the rehabilitation of the historically contaminated sites". The projects will be finished gradually between 2009-2011 and will have an important contribution to the fulfillment of the obligations Romania has in the waste management sector. The budget allocated through

the Operational sectorial Programme „Environment" for the projects referring to integrated waste management has a value of 1.17 billion euros.

Eco-Rom Ambalaje S.A. represents officially in Romania, starting 15 October 2003, the European System for Package Management „Green Point", in this way Romania is joining the other 26 states from Europe and America where this system is working. The license was granted to Eco-Rom Ambalaje S.A., for Romania, by the European Organization PRO Europe, who owns the rights for the brand „Green Point".

Through the „Green Point" system, the economic agents that have obligations for valorising and recycling the package waste, can transfer through contract, the responsibility to valorise and recycle the package waste to Eco-Rom Ambalaje S.A., which closes, at its turn, partnerships with local authorities, sanitation and transport companies and the firms specialized in recycling.

The economic agents who adhere to the Green Point will be able to insert the Green Point symbol on the packaging of their products. Thus, the buyer will know that the manufacturing or importing company is responsible from the social point of view, because it wants that the package of its products, collected from the population in separate containers, should be recycled or valorised.

Waste generation is the indicator which best illustrates the interaction between human activities and the environment. Waste generation usually follows the consumption and production trends. For example, waste generation (quantity/inhabitant) increases together with the income level. The increase in economic production, but also the inefficient management of resources, lead to the generation of big quantities of waste.

Table 1

Indicators for city waste generation in our country

Year	City waste (kg/inhabitant x year)
2000	355
2001	341
2002	384
2003	365
2004	378
2005	398
2006	410
Media	**376**

Source: Annual report concerning the environment condition in Romania for the year 2007

In comparison with the EU states, the quantity of city waste generated in Romania between 2000-2006 expressed in kg/inhabitant is situated under the EU average – 27.

The analysis of the current situation reflects the condition of the waste management in Romania and it is based on viable statistical data. It leads to the identification of the problems and to prioritizing, insuring sufficient basis for **SWOT** analysis (**S**trengths, **W**eaknesses, **O**pportunities, **T**hreats). The SWOT analysis is a synthesis of the current situation in the field of waste

management and presents the internal factors on which we have to concentrate (the strengths) or which must be annulled (the weaknesses), as well as favorable external factors (opportunities) or unfavorable (threats).

Table 2

SWOT analysis for waste management in Romania

STRENGTHS	WEAKNESSES
• the elaboration of the National Strategy for Waste Management, as well as the National Plan for Waste Management; • the elaboration of regional and county plans for waste management; • waste management has a complex legal framework; • the elaboration of guides for the implementation of suitable systems for waste management; • the experience acquired by certain local authorities in developing investment projects financed through European programmes; • setting up organisations which are oriented towards promoting efficient and lasting solutions for the waste management process;	• big waste quantity which is generated and uncontrolled storage; • the rate of valorising the useful fractions is very reduced; • the reduced quality of soil and water because of pollution with waste which is not stored appropriately; • precarious infrastructure for collecting, transporting and eliminating the waste; • the limited capacity of the local authorities to elaborate viable project proposals; • low level of awareness and responsibility of the population and the economic agents concerning adequate waste management; • lack of competent staff for waste management activities; • the existence of a big number of historically polluted sites, as a consequence of past economic activities; • low degree of implementation for the environment legislation; • the bureaucracy in obtaining financing for waste management projects.
OPPORTUNITIES	**THREATS**
• accessing EU funds for improving the environment quality in Romania; • developing tourism in an area where there is an efficient waste management system; • attracting foreign investors by improving the sanitation services; • the advantages offered by the public-private partnership in sanitation; • developing long-term investment projects in sustainable development conditions; • Developing a viable market for	• The pressures exercised by domestic waste on the quality of environment factors; • Unstable legal framework; • A mentality of indifference regarding environmental protection; • High costs in the implementation of „clean technologies" and of the best available techniques for waste management; • Irrational exploitation of natural resources; • Inappropriate use of EU funds; • Problems encountered by the small

recycling waste respectively a market for valorising the products resulted from waste processing; • Encouraging „clean technologies". Which are less polluting; • The possibility of partnerships with other city authorities for waste management; • Promoting the production of energy from sources that can be regenerated;	communities regarding the investment costs that are to be borne in the waste management projects; • Delays in approving the waste management projects; • Difficulties encountered in financing income-generating projects; • Difficulties in choosing the right place for building the waste infrastructure;

In order to comply with the requirements of the European Union, Romania will have to take the following measures:

- Make serious efforts for achieving a modern environment infrastructure;
- Provide quality sanitation services at reasonable tariffs for all the citizens, in order to protect the health of the population and of the environment;
- Invest in workforce training in the field of waste management, a scarce segment at the moment;
- Valorise at maximum the useful potential from domestic waste by developing a waste market, as secondary raw materials;
- Create an efficient collection-transport-valorisation-ecological storage network for waste;
- Encourage a sustainable consumption (by promoting eco-products), which means using efficiently the resources involved and a reduced impact on the environment;

The SWOT analysis confirms the fact that implementing an integrated waste management can have a significant impact on improving the quality of life and of the environment in Romania. The improvements in the field of waste management in Romania will lead to the promotion of sustainable development.

At the level of Romania, the present research in the field of waste management is concentrated on fundamenting the strategies, the action plans, the strategic planning of urban systems for waste management. Romanian research in the waste field is making progress gradually having the role to support and fundament the actions of the local and central authorities in order to adopt and put into practice those waste management systems which are similar to the most spread European practices. Thus, at the level of central authorities, there are two national research institutes subordinated to the Ministry of Environment (The National of Research and Development for Environment Protection – ICIM Bucharest and The National Institute of Research and Development for Industrial Ecology – ECOIND) which include laboratories and special sections for research in the field of technologies for waste management. The role of these research institutes is to fundament scientifically, based on national statistics and national reference data bases, the governmental and local adopted strategies, as well as to monitor the implementation of of the engagements taken when signing the treaty for joining the European Union (through the corresponding monitoring plans).

Conclusions

In our view, successful implementation of a sustainable waste

management system requires the active involvement of citizens in sanitation services by minimizing the quantities of waste generated waste, by supporting the actions of selective collection of useful fractions of household waste and encouraging their recovery.

We consider that the present problems with which waste management is confronted can be summarized as follows:

- The existing storing places are often placed in sensitive areas (close to towns, surface or underground waters, recreation areas);
- The majority of the current warehouses are not operated correspondingly, there isn't a strict quality control and a control of the quantity of waste entering the warehouse; there aren't facilities for the control of the biogas; the fermentation processes with gas and leach are not controlled;
- The fields occupied by waste storage are considered damaged grounds, which cannot be used for agricultural purposes;
- The collection of domestic waste from the population is not selective, in general; they reach the warehouses in a mixed condition, thus losing part of their useful potential (paper, glass, metals, plastic materials)
- The lack of an adequate infrastructure in this field, but also the absence of the machines and the installations for waste processing, insufficient transportation capacities, reduced number of containers for elective collection;
- Lack of ecological education and citizen spirit to be seen at many citizens who mistake the public space for the place where waste can be thrown;
- Impressive increase of one-use packaging in the consumption circuit;
- Insufficient involvement of city halls in approaching and solving the sanitation problems along the known flow: collection-transport-valorisation-storage-reintegration in nature;
- At present, the reduced valorisation of existing waste discourages the authorities in finding good and urgent solutions;
- The high costs of the implementation of a feasible integrated waste management programme;
- Lack of interest on the mass-media side for this subject

Starting from the problems caused by an inefficient waste management, the sustainable approach to waste management is vital for a community out of several reasons:

- The capacity of the warehouses decreases continuously, while placing and building new facilities is a difficult and very expensive process;
- Many materials which are found in waste are rare natural resources which must be recovered in order to reduce the impact on the environment and to increase life quality;
- The useful materials from the waste volume can be an opportunity to start a business;
- The majority of waste are recognized by the EU legislation as an important source of energy that can be regenerated;
- A system which is based on more than one alternative is more flexible to economic, technological and legal changes;

We consider that reaching the objectives of each direction of the European Union must be based on a very important evolution of selective waste collection. Their success is based mainly on each citizen's behavior, and the efficiency of the investment depends on making the public aware of the necessity of selective collection. The first step for the implementation of a sustainable

waste management system is represented by a change of education, culture and mentality so that waste would be looked upon first as resources and only then as something that must be removed.

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